CLAIMS

What is claimed is:

1. An irrigation system for a medical device, comprising:

an irrigation reservoir;

a pump coupled to said irrigation reservoir;

an irrigation line coupled to said pump;

a pressure sensor that senses a pressure within said irrigation line;

an accumulator that stores irrigation fluid; and,

a controller that is coupled to said pressure sensor and said pump to control the pressure within said irrigation line.

2. The irrigation system of claim 1, wherein said pressure sensor includes a flexible membrane that separates a first chamber from a second chamber, said first chamber being in fluid communication with said irrigation line, said second chamber being in fluid communication with a pressure transducer of said controller.

3. The irrigation system of claim 1, further comprising a valve coupled to said irrigation line and said controller.

14. The irrigation system of claim 1, wherein said controller controls a speed of said pump and a flowrate through said irrigation line.

15. The irrigation system of claim 4, wherein said controller varies said pump speed in response to a variation in the irrigation line pressure sensed by said pressure sensor.

16. The irrigation system of claim 1, wherein said controller can determine a flowrate generated by said pump.

17. The irrigation system of claim 6, wherein said controller determines an actual fluidic resistance from the flowrate and provides an output signal if the actual fluidic resistance is greater than a threshold value.

8. The irrigation system of claim 6, wherein said controller determines an actual volume of irrigation fluid pumped by said pump from the flowrate and provides an output signal if the actual volume of irrigation fluid is greater than a threshold value.

9. An irrigation system for a medical device, comprising:

an irrigation reservoir;

a pump coupled to said irrigation reservoir, said pump generates a flowrate;

an irrigation line coupled to said pump; and,

a controller that can determine the flowrate generated by said pump.

10. The irrigation system of claim 9, wherein said pump has a speed sensor coupled to said controller.

11. The irrigation system of claim 9, wherein said controller determines an actual fluidic resistance from the flowrate and provides an output signal if the actual fluidic resistance is greater than a threshold value.

12. The irrigation system of claim 9, wherein said controller determines an actual volume of irrigation fluid pumped by said pump from the flowrate and provides

an output signal if the actual volume of irrigation fluid is greater than a threshold value.

13. A medical system, comprising:

an irrigation system that includes;

an irrigation reservoir;

an irrigation pump that is coupled to said irrigation reservoir;

an irrigation line coupled to said pump;

a pressure sensor that senses a pressure within said irrigation line;

an accumulator that stores irrigation fluid;

a controller that is coupled to said pressure sensor and said irrigation pump to control the pressure within said irrigation line;

an aspiration system that includes;

an aspiration pump;

an aspiration line coupled to said aspiration pump;

an aspiration pressure sensor that senses a vacuum pressure within said aspiration line;

a medical device that is coupled to said irrigation line and said aspiration line.

14. The medical system of claim 13, wherein said pressure sensor includes a flexible membrane that separates a first chamber from a second chamber, said first chamber being in fluid communication with said

irrigation line, said second chamber being in fluid communication with a pressure transducer of said controller.

15. The medical system of claim 13, further comprising a valve coupled to said irrigation line and said controller.

16. The medical system of claim 13, wherein said controller controls a speed of said irrigation pump and a flowrate through said irrigation line.

17. The medical system of claim 16, wherein said controller varies said pump speed in response to a variation in the irrigation line pressure sensed by said pressure sensor.

18. The medical system of claim 13, wherein said controller can determine a flowrate generated by said irrigation pump.

19. The medical system of claim 18, wherein said controller determines an actual fluidic resistance from the flowrate and provides an output signal if the actual fluidic resistance is greater than a threshold value.

20. The medical system of claim 18, wherein said controller determines an actual volume of irrigation fluid pumped by said pump from the flowrate and provides an output signal if the actual volume of irrigation fluid is greater than a threshold value.

21. The medical system of claim 19, wherein said controller reduces a power of said medical device if the actual fluidic resistance is greater than a device threshold value.

22. The medical system of claim 19, wherein said controller changes a speed of said aspiration pump if the actual fluidic resistance is greater than a pump threshold value.

23. The medical system of claim 13, further comprising a valve that is coupled to said irrigation line and said aspiration line.

24. A method for controlling a pressure of an irrigation line of a medical irrigation system, comprising:

sensing a variation in the irrigation line pressure with a pressure sensor; and,

varying the speed of a pump that is coupled to the irrigation line in response to the sensed variation in irrigation line pressure.

25. The method of claim 17, closing the irrigation line and reversing a direction of the pump.

26. A method for determining a flowrate through an irrigation line of a medical system, comprising:

sensing a speed of a pump that generates a flowrate of the irrigation fluid;

determining the flowrate from the pump speed.

27. The method of claim 26, determining an actual fluidic resistance from the flowrate.

28. The method of claim 27, generating an output signal if the fluidic resistance is greater than a threshold value.

29. The method of claim 27, reducing a power of a medical device if the actual fluidic resistance is greater than a threshold value.

30. The method of claim 27, changing the speed of an aspiration pump if the actual fluidic resistance is greater than a threshold value.

31. The method of claim 27, determining an actual volume of irrigation fluid pumped by the pump.

32. The method of claim 31, generating an output signal if the actual volume of irrigation fluid is greater than a threshold value.

Todd B12